CLAIMS:

1. A method of artifact correction in a data set of an object of interest, the method comprising the step of: reconstructing an image of the object of interest on the basis of the data set; wherein a statistical weighing is performed during reconstruction of the image.

2. The method according to claim 1, wherein the data set is a projection data set acquired by means of a source of electromagnetic radiation generating a beam and by means of a radiation detector detecting the beam.

3. The method according to claim 2, wherein the source of electromagnetic radiation is a polychromatic x-ray source; wherein the source moves along a helical path around the object of interest; and wherein the beam has one of a cone beam geometry and a fan beam geometry.

4. The method according to claim 1, wherein the reconstruction of the image is performed on the basis of an iterative algorithm comprising a plurality of update steps until an end criterion has been fulfilled.

5. The method according to claim 4, wherein the iterative algorithm is a maximum likelihood algorithm; wherein the reconstructed image has the highest likelihood; and wherein the weighing is performed in each update step of the plurality of update steps.

6. The method according to claim 2, further comprising the step of: determining a number of detected photons during acquisition of the data set; wherein the weighing is based on a statistical error of the number of detected photons.

7. The method according to claim 5, further comprising the step of: determining a number of detected photons Y_i during acquisition of the data set; wherein the weighing is based on a statistical error σ_{Y_i} of the number of detected photons Y_i; wherein an update of an attenuation parameter μ_j^{n+1} is calculated from the attenuation parameter μ_j^n by

$$\mu_j^{n+1} = \mu_j^n + \mu_j^n \frac{\sum_i l_{ij} \frac{\sum_i l_{ij} \left[d_i e^{-<l_i, \mu^n>} - Y_i \right] / \sigma_{Y_i}^2}{\sum_i l_{ij} / \sigma_{Y_i}^2}}{\sum_i l_{ij} < l_i, \mu^n > d_i e^{-<l_i, \mu^n>}}$$

wherein d_i is a number of photons emitted by the source of radiation;
wherein l_{ij} is a basis function of an i-th projection;
wherein l_i is a vector of basis functions l_{ij} of the i-th projection; and
wherein $< l_i, \mu >= \sum_j l_{ij} \mu_j$ is an inner product.

8. The method according to claim 2, wherein the reconstruction of the image is based on a sub-set of at least two projections of all acquired projections of the projection data set.

9. A data processing device, comprising: a memory for storing a data set of an object of interest; a data processor for performing artifact correction in the data set of the object of interest, wherein the data processor is adapted for performing the following operation: loading the data set; reconstructing an image of the object of interest on the basis of the data set; wherein a statistical weighing is performed during reconstruction of the image.

10. The data processing device according to claim 9, wherein the reconstruction of the image is performed on the basis of an iterative algorithm comprising a plurality of update steps until an end criterion has been fulfilled; wherein

the iterative algorithm is a maximum likelihood algorithm; wherein the reconstructed image has the highest likelihood; and wherein the weighing is performed in each update step of the plurality of update steps.

11. A CT scanner system, comprising: a memory for storing a data set of an object of interest; a data processor for performing artifact correction in the data set of the object of interest, wherein the data processor is adapted for performing the following operation: loading the data set; reconstructing an image of the object of interest on the basis of the data set; wherein a statistical weighing is performed during reconstruction of the image.

12. A computer program for performing artifact correction in a data set of an object of interest, wherein the computer program causes a processor to perform the following operation when the computer program is executed on the processor: loading the data set; reconstructing an image of the object of interest on the basis of the data set; wherein a statistical weighing is performed during reconstruction of the image.